

IN THE ABSTRACT:

Please delete prior Abstract and insert the following:

--A method of optimally designing a structure includes a step of obtaining a solution of a structure optimal designing problem having a first solution process to solve an optimization problem of a first evaluation function for a status variable vector and a design variable vector, wherein the status variable vector is a displacement in each node, and the design variable vector is a rate of existence to a structural member in each element. The first solution process has a design variable update step of reading the design variable vector and the status variable vector stored in a first storage unit, updating the design variable vector, and storing the updated design variable vector into the first storage unit, and a status variable update step of reading the design variable vector and the status variable vector stored in a second storage unit, updating the status variable vector, and storing the updated status variable vector into the second storage unit. The status variable update step includes a second solution process to solve an optimization problem of a second evaluation function for the status variable vector and the design variable vector, wherein the second evaluation function corresponds a norm of a residual vector which is obtained as a difference between a nodal force vector and the status variable vector on which a global stiffness matrix is operated, and the status variable vector is not initialized upon start of the second solution process. An output step outputs the obtained solution.--